

Abstract

An AlN film as an underlayer is epitaxially grown on a substrate having a dislocation density of  $10^{11}/\text{cm}^2$  or below and a crystallinity of 90 seconds or below in full width at half maximum (FWHM) of an X-ray rocking curve at (002) reflection. Then, on the AlN film an n-GaN film is epitaxially grown as a conductive layer having a dislocation density of  $10^{10}/\text{cm}^2$  or below and a crystallinity of 150 seconds or below in full width at half maximum (FWHM) of an X-ray rocking curve at (002) reflection, to fabricate a semiconductor element.